Paris. 57 F. ix + 285 p.; ill.; subject index. 1968.

Éléments de Pathologie Cellulaire corresponds to the *Éléments de Physiologie Cellulaire* by the same author. Modern cytology having progressed mainly in the field of cellular substructure and molecular architecture, it was inevitable to conceive a cellular pathology based on morphology of ultrastructures and their physio-pathologic mechanisms.

Molecular pathology of the cell is described in three parts. In each chapter the authors have collected some examples of the corresponding pathologies with analyses of the subcellular and molecular mechanisms involved in them. The first part deals with the pathology of the cell as a whole: processes of aging and death of the cell, edema and hydropic degeneration, deposits and infiltrations (lipids, cholesterol, pigments, calcium for example), cellular growth and differentiation, the cancer cell. The second part is concerned with pathologic alterations of cell organelles, such as those of the nucleus, nucleoli, cellular surface, Golgi apparatus, lysosomes, etc. The third part reviews the pathology of cellular populations, that is, the interrelation of cells, in chapters on cellular motion, adherence, fusion, aggregation, and disagreggation of cells. At the end of each chapter is a short bibliography giving references, recent papers, or books to read for more detailed information.

This book is not an exhaustive one, considering the enormity of the subject. It has been written for non-specialists, physicians, biologists, pathologists, or biochemists wishing to follow the progress of a quickly growing science. It is also useful for its general concepts and synthetic views suggested as underlying the numerous gaps in our knowledge, and for its pointing of new ways for research in the future.

ANDRÉ COLLET

EINFÜHRUNG IN DIE PRAXIS DER HISTOCHEMIE. *Second Revised Edition.*

By Ludwig Spannhof with the collaboration of Wolfgang Tessenow. VEB Gustav Fischer Verlag, Jena. $17.50. 172 p.; ill.; subject index. 1967.

The "Introduction to the Practice of Histochemistry" was so well accepted in the first edition that within 3 years a new edition became necessary. The book, devoted especially to the newcomer to the field, students, and technical staff, covers the main topics of histochemistry: carbohydrates, lipids, proteins, nucleoproteins and enzymes. In each of these chapters, the mechanisms of the respective histochemical methods are given. The explications are exhaustive but intelligibly written. The technical prescription for each method has been brought up to the latest standard and the results are illustrated by black-and-white microphotographs.

Several chapters include experiments (e.g., blocking reactions). This makes the book also suitable as a laboratory manual for practical courses aimed at understanding histochemistry. In the appendix are given the outlines for freezing-drying and freeze-substitution, as well as formulae for fixing media and buffers frequently used in histochemistry.

H. VON MAYERSBACH

GENETICS AND EVOLUTION

GENETIC MOSAICS AND OTHER ESSAYS. *The John M. Prather Lectures, 1965.*

By Curt Stern. Harvard University Press, Cambridge. $6.50. xi + 185 p.; ill.; author and subject indexes. 1968.

The first essay, "Mendel and Human Genetics," is a brief (26-page) account of the origins and development of the subject. Mendel's influence was indirect, but is rightly considered as of primary importance. The emphasis, in this essay, is on the development of sound basic approaches to the study of the genetics of man, with little attention to the numerous Utopian schemes that have always been so conspicuous in the literature of eugenics.

The second and longest essay, "Genetic Mosaics in Animals and Man," is a catalogue of the ways in which genetically different compositions may arise in a single individual — through accidents of fertilization or of cell division, through somatic mutation or crossing over, through inactivation of parts of chromosomes, or through passage of cells from one embryo to another through the placenta. Examples — many of them from human material — of the various types and sub-types are described. This will be a very useful reference source, with a helpful bibliography.

The third essay, "Developmental Genetics of Pattern," contains a general discussion that is most welcome because it summarizes so much of the important work in this field done by Stern and his students in recent years. This work, based chiefly on the study of the bristles of *Drosophila,* has made use of mutant and sexual differences in mosaic individuals. The objective has been the integration of genetic and embryological approaches to the study of the development of pattern. Much of the discussion centers around what Stern calls the "prepattern," which is a relatively fixed system of sites, at each of which a bristle may develop, though it

may fail to do so in any given individual. I must confess to reservations about the usefulness of this term, but there can be no doubt about the interest and importance of the many facts here summarized.

The fourth essay, "Thoughts on Research," is a brief (4-page) account of what it is like to be a research scientist. I feel that it should be recommended to every graduate student.

A. H. STURTEVANT

MAN AND HEREDITY.

By G. W. Roderick. The Macmillan Co., London, Melbourne, and Toronto; St. Martin's Press, New York. $7.00. ix + 240 p. + 8 p. pl.; ill.; subject index. 1968.

This book was written primarily for students and teachers of biology, and for adults with varying backgrounds. The topics treated are Mendel's laws, the chemical nature and function of the gene, the various modes of inheritance, chromosomal abnormalities, blood groups, heredity and environment, genetic prediction, and the biological effects of radiation.

A disturbing feature of the book is the author's inconsistency. For example, the diagrams of spermatogenesis and oogenesis on page 22 do not show chromosome reduction in the products of the first division, but this is shown in similar diagrams on page 123. The author lists the hallmark features of most common genetic disorders, but for some he does not. The description of the nail-patella syndrome on page 27 fails to mention the cardinal feature of absent or hypoplastic patellae. In Chapter 11, Heredity and Environment, the author discusses environmental influences operating in some conditions (e.g., hypertension) but for others he fails to do so (e.g., tuberculosis).

The book contains factual errors: On page 19 the author states, "chiasma formation results in genetic interchange;" he might better state "chiasmata are the result of genetic interchange." On page 22 he states that an unreduced germ cell called spermatogonium enlarges to form two secondary spermatocytes; he might better state that a spermatogonium enlarges to form a primary spermatocyte. In the glossary, recombination and crossing over are stated to be synonymous, even though not every crossover event results in recombination.

A carefully selected list of references and a bibliography are included. The book is, by design, an oversimplification of a complex subject, but in spite of this and the slight inaccuracies, this very readable book offers the non-specialist an opportunity to become familiar with some basic human genetics.

EDWARD R. PIERCE

MOLECULAR GENETICS. *Current Concepts in Biology Series.*

By A. Gib DeBusk. The Macmillan Company, New York; Collier-Macmillan, London. $1.95 (paper). x + 134 p.; ill.; subject index. 1968.

A few years ago Molecular Biology was the subject of special seminar courses for advanced graduate students. With the passing of time, knowledge of the subject has gradually filtered down to lower and lower educational strata. The filtering process necessarily removes the distinctive flavor of the original material. It is claimed on the cover that this book was prepared by distillation rather than by filtration.

Gib DeBusk introduces the undergraduate student to the standard topics of Molecular Biology, such as structure and replication of DNA, transcription and translation of RNA, in addition to a potpourri of more genetical topics, such as recombination in microorganisms, complementation, mutagenesis, gene fine-structure analysis, and occasionally delving into esoterica, such as "regulatory role of hormones" and the "molecular basis of memory and behavior."

There are several attractive features about the book: it is short, full of diagrams, and demands very little intellectually from the student. Its distinctive feature is the large number of scientists' names which are mentioned.

C. M. STEINBERG

GENETICS AND ANIMAL BREEDING.

By Ivar Johansson and Jan Rendel; translated from the Swedish by Michael Taylor. W. H. Freeman and Company, San Francisco. $17.50. xi + 489 p.; ill.; subject index. 1968.

The book gives a broad and general summary of published work relating to the improvement of domestic animals. It is an excellent general reference for most areas of animal breeding; it is not generally suitable or intended as a textbook for course work. Conclusions and results of previous work are presented without unnecessary detail. Proofs of formulae are omitted, as seems appropriate because of the breadth of subject matter.

The first three chapters give background information on the reproductive system, mendelian inheritance with a brief review of the structure of genetic material, and the first concepts of population genetics. The remainder is devoted to applied animal breeding and related work. A chapter on multiple births covers general considerations and gives a critical discussion of the use of monozygotic cattle twins in research. The inheritance of coat color is discussed briefly for several species, including fur-producing ones. A general discusion of the fast-growing field of the inheritance of blood char-